3/29C

ORIGIN OF THE UNIVERSE

by SWAMI MADHAVTIRTH

Origin of the Uuiverse has a link with the origin of time and the origin of time has a link with the origin of individual life. Individual life cannot be understood without understanding the origin of space. Origin of space depends on spatial observations and on gravitation. As in dream, so in the waking condition.

Yet, in practical life, there is a somewhat dual method of knowledge (1) while travelling in a train we may have a knowledge of the whole within which the observer in the train is here and (2) knowledge of the whole within which, the trees and bridges and telegraph posts are definitely there.

Generally, a man's capacity is limited to the knowledge of something out there and something earlier and later. This is due to his body moving with the earth round the sun and on the earth. But his thought capacity reaches further and finds a wide variety of discordant scales of time due to various states, as in dream, imagination and other motions and observations in the waking state.

The Universe can begin with spirit and not with matter. The spirit is prior to the division into related and opposed complementaries which division is all that is meant by creation.

★

LIBRARY
No. 3129 C
Shri Shri Ma Anandamayee Ashram
BANARAS

ORIGIN OF THE UNIVERSE

LIBRARY
No.........3/29C
Shri Shri Ma Anandamayee Ashram
BANARAS

By :

Swami Madhavtirtha

President, First All religions Conference
(Ahmedabad, April 1947)
President, Maha Gujarat Divine Life Society
(Surat, May 1953)
Author of 85 philosophical books in Gujarati
and 15 in English.

Published by:
Swami Madhavtirtha
Vedant Ashram
Post Valad
(Ahmedabad–Prantij–railway)

First edition 1–8–0 Copies 500

Printed by:
Shantilal Himatlal Shah.
Hariher Printing Works
Khadia Char Rasta
Ahmedabad.

3|29 e

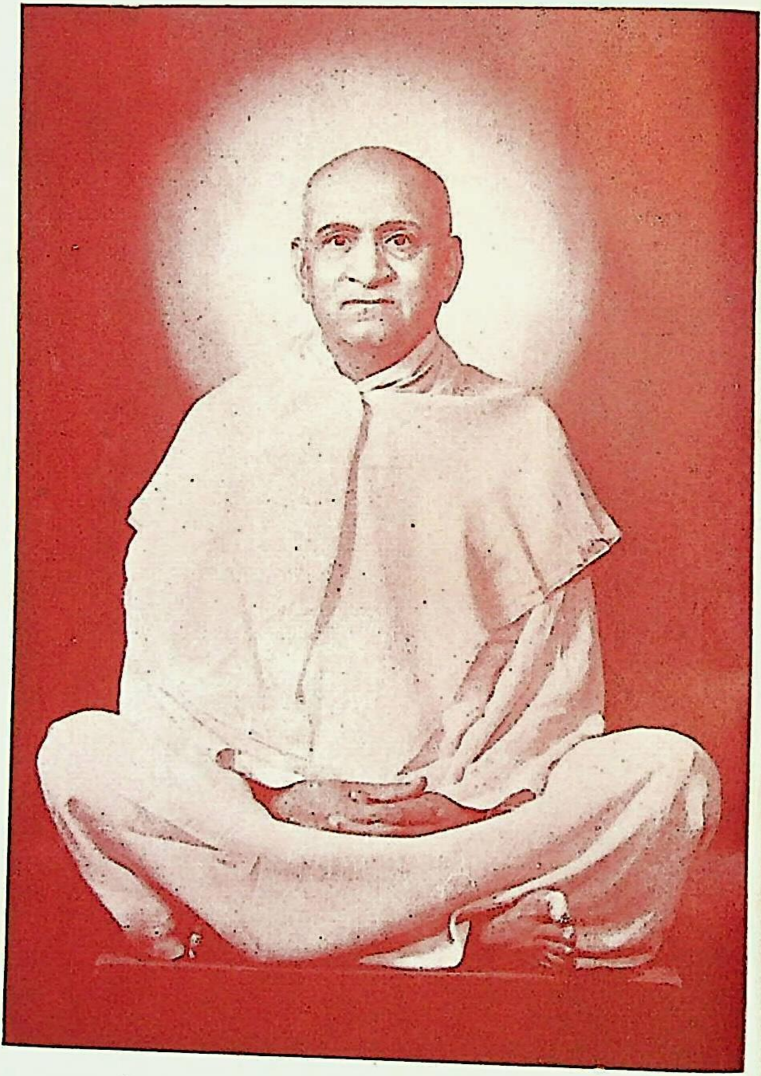
INDEX

Introduction

chapter	subject	page
1	Origin of the Universe	21
2	New logic and new science	41
3	Age of the individual	49
4	Origin and age of the social fields	64
5	Appendix–quality and quantity	73–92

ERATTA

page	line	incorrect	correct
2	1	bcen	been
49	22	penetable	penetrable
60	last	sentinnce	sentience
70	9	sleop	sleep
71	last	constadt	constant
75	18	mportaut	important
75	last	enables	enable
79	25	establisment	establishment



Swami Madhavtirtha

INTRODUCTION

In the May 1953, an announcement was made by the British Society for the History of Science re. a prize essay competition on "The Age of the Universe". A prize of £ 50 was offered for the best essay of not more that 4000 words on the following subject:–

"What is the logical and scientific status of the concept of the temporal origin and age of the Universe".

It was also stated in the above announcement that the essay should clarify the logical, theoratical and observational aspects of the idea of assigning a quantitative age to the Universe.

The Judges' Report was published in November 1954 in the British Journal for the philosophy of Science. It is stated therein that, in all, 26 essays were received, of which 11 were from Great Britian and Northern Ireland, 5 from U.S.A. 3 from India, 2 from Canada, 2 from Italy, 2 from Austria and 1 from Germany. Out of 3 essays from India, one was sent by me. This is given in Chapter 1,

The Judges state that "no essay of outstanding originality was received, yet, the competition has been of value in producing several interesting contributions and in demonstrating the number of different ways in which the problem can be treated. About half the essays were genuine attempts to tackle the problem set and these presented a variety of treatments. Some essays which were of interest could not be considered for the prize because their main emphasis was on the observational or historical aspect, whereas the aim was to clarify the logical and scientific status of the concept. Of those essays which tackled the problem seriously, several had to be excluded either because of weaknesses in the treatment or because they neglected the essential difficulties of the problem."

The prize money was divided between Mr. Michael Scriven of the University of Minnesota (£30) and Dr. J. T. Davies of King's College, London (£20). These two essays and four other essays were published in the November (1954) issue of the British Journal for the philosophy of Science.

The question of the temporal origin and age of the Universe is a very difficult subject, yet we should try to solve this problem to the best of our ability. In order that present and future thinkers on this subject may be able to throw more light, I have given, in this small book, my own essay in full and a purport of what the above-mentioned six thinkers have said on this subject.

1. Substance of the first prize essay

The ancient Greeks, Babylonions and Egyptians did consider the nature of the Univerre in the following two ways:–

(1) The origin of life is connected with the existence of the soul and the freedom of the will.

(2) The origin of the Universe is connected with the existence of a God.

But there is some difficulty in the very concept of the Universe (as opposed to a process within it) having a beginning. The prize winner says that the concept establishes a lower bound to the Universe. It is relevent to the question of the length of the present phase of the evolution of the Universe. A Russian Scientist Gamow says that we have no information about the "pre–galactic past", which could have lasted from the minus infinity of time to about three billion years ago.

The main question is "what is the actual meaning of" temporal origin of the Universe ?" It seems that the Universe was very different in constitution and appearance a few thousand million years ago, yet, in order to obtain an initial moment, one must assume the propriety of extrapolation until the measured variable is zero. But our assumptions rest on a state of the Universe very different from its state at moments near to the initial moment. Our extrapolations may give us some agreement about the moment when the expansion of the Universes began according to the present growth law but are indequate for deciding when the Universe began expanding.

A particular case which has some special interest is, where a prier state of the Universe approximated stability, we might have a homogeneus distribution of relatively inert atoms, or, interpreting stability in a different sense, a uniform radiation field. It is difficult to find a distinction between an instant and an eternity. Suppose that everything within the Universe suddenly ceases all movements for a time. The supposition is untestable and in fact unknowable since if all movement cases, we shall not be aware of it, nor will clocks show it.

The origin of the Universe is the origin of the first thing, no matter whether part of the present phase or not. There are five other difficulties :–

(1) The measurement of the duration of a stable state.

(2) The dependence of the investigation on other research or upon an arbitrary decision about what it is that is capable of existence.

(3) The existence :of a temporal origin of the Universe may be of the same nature as the existene of a fundamental substance and its origin.

(4) Who was the fully–equipped observer present in the past that the Universal or the fundamental substance began in the past !

(5) Where there non–material existents such as fields in the beginning of creation ? and can there be fields without material contents ?

The prize winner says that a temporal origin of the Universe is not meaningless but it is not possible to assign a specific date to it. If we give a date, we must also place a hypothetical observer. But he may not be an actual observer. The last thing vanishing is parallel to the first thing appearing. But a single particle can have no velocity and the last particle cannot vanish. The concept of velocity requires a frame of reference, normally provided by other existents, and thus cannot apply to their absence. There can be no time without some change, and it is useless to find first moment in terms of our present time-scale which does not have a zero-point. The unit of temperature measures a change in some quantity relative to its zero value, that of time does not. If there is such a steady state it is certainly not verifiable. We shall never find evidence, for an empty state with a date attached. All our dates are determined from existents. Hypothetical observers cannot bring back evidence. New cosmologists believe that the overall appearance of the Universe is always the same; but no verifiable claim can be made either that the Uuiverse has a finite age or that it has not. The difference is one that is not within the power of science to determine, nor will it ever be.

Note :–The mistake of the prize-winner lies in the fact that he can see a measurement of some quantity relative to a zero value in the temperature but he cannot see a zero value in time. I think, every man is able to find a zero value of time in sound sleep, or in waking from a dream. These two states are very helpful in deciding the origin of the Universe and I have considered these in my essay given in this book.

Why should we limit our logic only to the experiences of the waking state and not consider the question of another time that we experience in the dream state and the absence of time in sound sleep ! The differences between the western methods of logic and the Eastern methods have been shown in chapter 2 of this book.

Second Prize of £ 20.

The second prize-winner gives more scientific proofs than logical proofs. He says that the temperal theory based on linear extra polation should be accepted until it be disproved. He gives the mean inter-galatic distance which appears to be continuous, from which we can extrapolate linearly back to zero and hence find the time interval representing the age of the Universe. He admits that new forces may be operating and only terrestrial or galatic forces cannot be applied over the entire universe.

There are some investigators who concur that although there are local differences, there is a large-scale homogeneity in the Universe. They think that large-scale appearance of the Universe does change with time. Individuals are born, age and die but the population may remain in a steady state. All the trees of an orchard do not have the same age. It is quite possible that the time-measure at very great distances may be small . Time scale may also vary with the age of the Universe. The age of the Universe is a concept whose validity depends on the applicability of the time-scale of laboratary physics to the Universe. This process gives a rate of expansion as well as a zero-time. The criterion of a scientific theory is that it must be possible for an observational check to be divised, by which it might be disproved. The second prize-winner prefers to use the linear extra-polation rather than invoke the cosmological constant because the latter does not enter the theory of relativity in the nearer regions of space. But he forgets that Prof. Milne has been able to find a cosmological constant in all regions of space, as space is taken as a function of time. He sticks to his theory of linear extra-polation and according to this point of view, the age of the Universe is about 4×10^9 years.

Note :—It has been proved by the later-day science of relativity that there are not linear measures external to the system. If B follows A, we require a second calendar and a third calander to check the second which will lead to infinite regress. But we do not stand outside the Universe. States which appear to us to be identical in all respects cannot be observed twice but are in fact only a single state at one instant. From this point of view, the hypothesis of a continuous and irreversible creation of matter serves to eliminate the unobserable. The notion of change, on which our concept of time is based is not one which can be examined externally. We ourselves are a part of the chaging world; we do not stand outside the temporal process which we seek to discuss. As in dream, so in the waking condition. It is also impossible for a man to examine his own mental states as if from outside.

Modern Science has been able to find that an interval is literally composed of unextended point-elements, and therefore it is possible to obtain a consistent conception of the extended linear continuous as an aggregate of unextended elements. But this is not external to the system.

Relativity has nothing to do with the particular position in space and time or the particular motion that an observer has but only with the positions and the motions, he assigns to himself and these he can choose as he pleases. The second prize-winner may think himself on the earth, or he may consider himself on the sun or at the centre of a galaxy. All the dates with which astronomers work count as observations of one person alone. On the basis of linear extra-polation advocated by the winner of the second prize, he has bound himself with a division between the observing system and the object observed which has become arbitrary.

Other writers

Mr. Ernest Opick says that a theory not supported by facts is a mere possibility, it is only by chance that it may prove to be correct. The concept of age must be reduced to a time-scale. The rate of irreversible processes in different physical complexes—the radio—active elements, the Earth, and the solar system, the stars, stellar systems, the galaxy, the observable portion of the extra–galatic Universe are such as to suggest an age not exceeding 6000 million years for the Universe in its present from and content. This rate may apply to the observers on our earth but not to those who may be beyond the earth or to those who may be in a dream state.

G. T. Whitrow says that the Universe was fashioned by the Creator in accordance with an ideal pattern which was eternal. He quotes that from Plato and St. Augustine, the world and time cc–exist, i. e. the world was made with time and not in time. With time means that it has now an age of 4000 million years.

Richard Schegel considers that there may have been changes in relations between the time of an orbital revolution of the earth in a prescribed solar system and the time of other cyclical processes of nature. Proposals for time changes in physical processes have been made by among others, P.A.M. Dirac and the late E.A. Milne. The theory of relativity requires that the time rate of a physical process will vary with the velocity of the observer with respect to the process. Therefore, there may be as many "ages of the Universe" as there are observers with significantly different velcities between themselves. But this is ruled out by an assumption of large–scale uniformity among the motions of the galaxies. But what happened before the beginning of the expansion of the Universe? We can only properly speak of some time as being the age of the period of expansion. There are others who believe in a steady–state Universe. This leads to an infinity of time. The Universe may be essentially a-temporal, with possibilities for time–defining processes. But over–all, there may be no such process in the Universe and hence, no meaningful way of ascribing a time or age to the Universe. There is no physical basis for applying the time concept to the entire Universe, yet the consideration of possible changes in the physical laws presents a more attractive alternative to steady–state theory, than do creation hypothesis, But the Universe appears to be a–temporal in its over–all aspects.

B. Abramenko considers that concept for the actual Universe is logically inconsistent. There is no cosmic time common to all points. Assignments of a definite value for the age of the Universe, the same for the whole of it, has neither logical, nor observational nor theoratical basis. Absolute speed does not exist. A time of positive curvature is possible. It abolishes its absoluteness and this is more consistent with the spirit of relativity. It is to be expected that elimination of infinite time will lead to a better approximation to the structure of the Universe. The effect of time curvature, usually insignificant, grows noticeable at large distances and consequently long long intervals of time. The age of some formation is the phase of its evolution along the curved line. There may be a time–circle without implying that it refers to all the formations existing in the world. If time actually possesses the property of being curved, then some physical process must exist anyhow, for time is not an independent entity standing aloof but simply one aspect among others of the property of matter. As the curvature of space is found by observations, the curvature of time is also due to observations. Any description of the scientific picture of the world if restricted only to its physical contents will not describe the whole.

Note :–I agree with this last portion. I have developed my essay on the last view–point mentioned by Abramenko. My essay is given in chapter I of this book.

If we draw a straight line on our earth, and if we lengthen it very far, it becomes a curved line because the earth is round. Similarly if we draw a straight line from the earth to the sun, it becomes a curved line because the space is curved. This is now proved by the theory of Relativity. It is also proved that where space is curved, time also becomes curved. A time-space curvature exists in our dream and also in the waking state. Therefore, we can never obtain a linear measure straight line except in the absolute spiritual state. But there are no events in the Absolute state, therefore, we cannot get a temporal origin of anything. When we find a temporal origin of anything, it is really the temporal origin of a system which includes the observer, the instrument of observation and the external world. This is called Maya in the Indian philosophpy. It is called operational measurement in the new sience.

In the Indian philosophical language:—

Vishwa is called the Universe; Vishwa is also called the beholder of the waking state.

Vishwa-Karma is called the Creator of the Universe.

Vishnu is the spirit who enters the Universe
and keeps it going.

Vishwanath is the spirit which takes our
vision beyond time and space.

The first Vishwa has no independent existence and therefore the question of its origin does not arise. The time of Vishwa–Karma begins with his action or Karma. The Universe as seen by an individual also begins with the time of observation, Vishnu's life begins when he enters the universe. He remains with the serpent Ananta i. e. the coiled universe. This is the time–space carvature. It lasts as long as the heat of the observation of the Vishnu lasts. When his observation coms to an end, the heat and pressure of the universe is considerably reduced, the cooling process of Vishwanath begins and the Universe is reduced to an ocean of water. The time of creation begins with the activity of the Vishwa–Karma, :the Divine Engineer. Then the number of enginering colleges increases. He is the god of production. Then Vishnu begins his work of distribution by entering the Universe. At this time, the merchant class comes in power, Our life is such that we also require control over consumption. This work is done by Vishwanath in two ways:—

1. By advising the cultured class not to over-enjoy the Universe.

2. By destroying the uncultured with the radio-active force of the atom-bombs, therefore the origin and end of the universe depends on the Karms (events) of the individuals composing the universe.

We get our day of 24 hours and our year of 365 days on account the movement of the earth round the sun. This time does not exist for those who are not born and who are dead, and for those who may be living on other planets, A man who is born on our earth is not only attached to the time of the revolution of the earth round the sun but is also attached to the evolution of the three gunas (qualities) of the prakriti. The gunas are in flux and serve the purpose of the individual. A new purpose creates a new time according to the nature and intensity of the purpose. In the Sankhya method of Indian philosophy, evolution is not a linear evolution. The stream of evolution divides itself into many tributaries at some points and then each of these tributaries is equi-distant from the common end.

Every stage in the evolution does possess

all the three gunas though in different proportion. The effect exists before origination. The origination is only a process of making manifest what was latent, explicit what was implicit, actual what was potential. Thus the whole of the physical universe is latent in Pakriti. Hence the Prakriti is called unmanifest (अव्यक्त). Nothing in the physical (manifested) world is free from the three gunas. This system believes in real change resulting into what is qualitatively and relatively new. But the Purusha or the soul of the individual is outside the circuit of evolution. In this system, we only get a quality of time, not a quantity of time.

Mathematics gives us a quantity of time. It gives a description not of the nature of things but of their quantitative relationships and behaviour, including spatial and temporal relationships. Whenever we investigate the properties of time experimentally, it is these extentional relations that we are finding. Therefore, it seems logical to conclude that time as known to us must be the abstraction of these material relations and not something more transcendental. It is difficult, if not impossible, by any effort of imagination, to conceive time as an existing physical entity, a thing; all we know is that events both in our consciousness and in what we observe of our environment occur consistently compared with one-another and in the same way and in the same conditions. Our idea of time is in their sequence and in their speed which we can compare one with another and which we know to be altered by change in conditions for instance :—

1. by difference in temperature.
2. by difference in feeling.
3. by change of position in a gravitational field.
4. by different kind of movement.
5. by passing from the waking state into dream and sound sleep and vice versa.

Our idea of time, is, something passing which we can measure by such events. Therefore, there are two view-points about space and time as follows :—

1. There can be space and time without matter;

2. Outside the penetrable gravitational field

(अनुयोगी–प्रतियोगी), there is no such thing as space and time.

There is nothing compared to outside and the expression is meaningless. As in dream, so in the waking condition. Inside, there is only space–time but the literal descriptions are necessarily in terms of space. Time being a measure of change would appear to have no meaning except in the presence of at least a measure of position. In empty space, position, direction and time seem inconceivable. It is only the other material that can determine the differencc in movements.

A gravitational field is created by a distortion of an ideal reality, yet the ideal reality remains independent of a gravitational structure, otherwise the field cannot be measured.

Analytical mathematics have developed abstract four–dimentional geometries by means of which uniformity of time is disturbed or is restricted to local distortion. A motion of translation through the ether cannot be cetected by an observer who shares in that motion. As in dream, so in the waking condition. A new system of reference is required to find the relative time of the first system. Evolution is, therefore, something like the result of the feeling of four-blind men who touch an elephant at different places. Their descriptions are local distortions of the whole. Therefore, it is difficult to get a quantity of time for the whole universe. We can either get a local distortion which we may call a quantity of time or we may get a quality of time, as in the theory of relativity or in the Indian philosophy.

Vedant Ashram
Post-Valad
Ahmedabad-Prantij Ry.
1-5-1955.

Swami Madhavtirtha

This book is published

IN MEMORY OF

Shree Kovilakathu Narayan
Madhav Kartha
(Shertally, Travancore)
father of G. Rudrani Amma
M. B. B. S.
(Lady Doctor, Dhrangadhra, Saurashtra)

CHAPTER I

Origin of the Universe

(The author's essay)

Concept means an idea of the attrributes common to a class of things. The Universe contains the following:—

1. Matter, energy, electrons, protons, etc.
2. Waves of lights of various kinds.
3. Various kinds of living beings.
4. Consciousness of various kinds.
5. Time orders and space orders of various kinds,
6. Dreams of various kinds.
7. Sleep, swoon, hysteria &c.
8. Hapiness and unhappiness of various kinds.
9. Supramental elements.
10. The Divine substance of things.

All these combined give us an idea of the wholeness of the Universe. If these elements are separate, they will create a multi-verse and the question of space which separated them will arise. If they are not separate, we can only know the Universe as conditioned by a human measure and the truth of that measure.

Quantity of time requires succession. Succession is a three termed relation expressing the relation of two-termed entities to a third and not to each other. The smallest time which cannot be further divided can be called a moment. When any particle leaves one place and acquires another place, the interval is called the moment. An unbroken flow of such moments is called succession. The Universe shows a movement but its human aspect of succession is seen by a human being according to the human measure.

The objectivation of time is dependent on the development of a consciousness of the present as distinct from past and future. This consciousness does not clearly exist in our childhood. When the human consciousness of past, present and future develops in later years, the human self distinguishes itself from them and time is objectifed as a succession. But just because this succession is an objectivation, the self is not swallowed up by it. It is constantly excluding itself from the successive links-past, present and future by comparing them and by this exclusion it draws itself back into an unconscious timelessness. Consciously it lives in time but only by relating past, present and future to the continuity of the self in its time-transcending existence which is not illuminated by temporal consciousness but from which the succession in time and extension in space is illuminated,

Objectivation of the time order is only possible by means of objectified space. Time is measured by means of the periodic movements in space of celestial bodies or hands of a watch &c. In a subject which is limited to this space and time of immediate experience, we can only get a human measure of time and no consciousness of a world-space or of eternity will arise. Empty time is a form of possibility. In this form, it has an indefiniteness inconsistent with outer reality and only consistent with psychic or conscious realisation. Outer reality means definition in space and time which implies a limitation of freedom contained in the pure form of possibility. Physical time must be considered as a dynamic definition by which a selection of possibilities contained in empty time are realised. Besides, the human temporal possibilities realised in the physical world, a multitude of other temporal possibilities are thinkable and constructively imaginable. When a metre is used as a means of perception, it excludes from reality a multitude of possibilities that might have been realised by it as a means of construction. Pure time–intuition is something very different from the time as it is experienced by the human senses. It is impossible in the world of human sense to reach the degree of exactitude characteristic of the world of mathematics. The Universe as seen by human beings has a measure of curvature of time and space which corresponds to the gravitative force of the number of observations in the waking state of human beings. If a man gets a dream, the curvature of the time and space of the waking state is dissolved and new time–space curvature begins in the dream condition according to the nature of dream–observations. The idea of a long time persists in our dream condition also. There is order, design, meaning, causation, motion, necessity, happiness and unhappiness in the dream condition which at the time of dreaming appears like a waking condition. But there is a time–space curvature and it is possible to find the origin and age of the dream universe after waking.

By means of sensations, we live in time, but by virtue of our conscious inner activity time is in us. As the dream measure has created the dream universe, our human measure in the waking state creates our human universe. The age of that universe is equal to the age of that measure. It is difficult to realise our mistake in the dream condition and it is also difficult to realise our mistake in the relativity of measure in the waking condition. But after the theory Relativity, thousands of books are available to prove that our human measure is relative. Prof. Einstein says that there is a chronological order of situations but there is no past present or future. Further experimental proofs are also available. In subconscious state in childhood, the question of time does not arise and in supramental or spiritual state there are no divisions and the question of time does not arise.

It is impossible for an event belonging to a human Universe to be transported to an universe seen by an animal without being stretched or pressed. There are infinite possibilities of velocity as well as slowness of the Universe. It is the scale of observation which creates the phenomena. What is rapid to our senses will be show to an insect with a life span of a few days. To an imaginary being with a life span of ten thousand million years, the evolution of the Universe will appear to be very rapid. If our pulse were a thousand times slower than now and the time needed for single experiences correspondingly increased, we should in a year have only the number of experiences which we now have in 8 or 9 hours. The determining factor in this time order will be the time which we need to become conscious of sensual impression. If the subjective human time measure is either shortened of lengthened as in our dreams, or childhood or in a spiritual stete, the appearance of the objective world in which we live will be fundamentally changed. Even in young age, if we are able in the same unit of time to perceive many more impressions than now, this unit of time will then be much longer to us and we shall have the same number of experiences in a much shorter time. The description of the Universe by an observer at the centre of our galaxy will be different for example from its description by an observer at the same place but moving with one-third the speed of light. The laws of nature by such two observers will be different. They would be reconcilable but different.

A duration of a quantity of time is produced when the same motions are repeated with regular intervals. But there are so many scales of observation that there are infinite possibilities of velocity as well as slowness of the Universe. Any increase in velocity reduces the time needed for traversing a certain distance while a decrease of velocity implies an increase of time.

A question was once discussed between Einstein and the late Indian poet Tagore as to whether the Universe is independent of human perception. The full reply is given in Appendix II of my book "Wonders of the Time Space." Briefly speaking, Einstein tried to prove that the Universal Truth is independent of human consciousness and poet Tagore tried to prove that if the human consciousness widens, it can comprehend the Universal Truth. But widening of the consciousness only removes the obstacles, it does not create the Universe. If there is a separate creator, the question of space will arise; if there is not a separate creator, there will be no separate creation and no fundamental time-order.

If it is recognised that our experience of the Universe in the waking condition is a four-dimensional order, then it is not difficult to find the temporal origin and age of the Universe. It is something like finding the temporal origin and age of the dream universe.

There are many persons who find a cosmic order in the Universe, but the modern science has recognised that that order is statistical and therefore its quantity of time depends on the quantity of observations. During the last two hundred years, there has been a great increase in the number of events due to increase in population and increased number of visions and thoughts supplied by newspapers, novels, cinemas, radios etc. These have created a certain objective cosmic order. It has originated with the origin of the commercial and the communist culture and its age is equal to that culture. The historical method of thinking has commenced after the invention of the printing press which gave us many historical books and many newspapers. The rotary press has increased the number of events, and therefore an increase in the time of the human Universe.

Life, art, love require time for their develoment, and therefore require periodicity and rhythm. They require a definite time. As sensual beings we are immersed in a definite human time-order determined by human congregations, yet intellectually or in the abstract, we are able to transcend this limitation by the calculation of other time-orders and the consequences of them. It is also possible to change the present time-order, if political histories are replaced by cultural histories. Every dimunition in the number of observables that are assumed is a gain in life and a gain in science. Periodicity depends on the nature and number of events. There are some events which bring the human cosmos in existence. some events which maintain it in existence and there are some events which will lead to its dissolution. The idea of succession is applicable to special motions arising within the Universal expansive presence by retardation and to psychic experiences which owing to the limitation of the power of human apprehension must be distributed over a series of acts and moments within an abiding simultaneity.

Our dream state passes away quickly but our waking state is found to persist every day. This is not a fact of nature but it is due to the continuance of human method of observation. The determination of the physical laws simply reflects the determination of the method of inference i. e. human measure or Maya,

A peculiar inter-dependence is seen to connect life and consciousness. The predominance of life is generally connected with a lowering of consciousness and increase of time and the predominance of consciousness with a weakening of life and time. As physical beings we fill with our bodies a subjective central space within the space of senses as well as the space of physics and this gives us a periodicity of time. As thinking beings, we are able to neutralise the perspectivity of space and time which is the result of our participation in a definite physical state of motion in relation to other motions.

There are many methods for correcting our human vision both in the West and the East and we may try to define which is the best method. We may start with a method by which we may try to solve our problem by means of more independent elements or we may try to solve our problem by a method in which there are minimum number of independent elements. The second method is preferable to the first. This is well recognised in logic as well as in science.

The Right Method

Many religious persons say that God has created the Universe at some time and he may have created all living beings at some time. Many persons all over the world accept this statement because this method of thinking contains the minimum number of independent elements i. e. God is the only independent element in this method. This statement may or may not be true. Its value does not lie in our being certain, but in our being able to derive from it some good specific consequences and proper regulation of human life. This is called art. A man is not afraid of committing a murder if he knows that he will only be hanged, but if he knows that God will give him a greater unbearable punishment by keeping him for a long time in hell or by giving him many unhappy lives, he will not commit any crime. This gives a long period of suffering for a crime and it will be regulated by a supreme independent God. This is a simple method of one independent element.

In the ancient scriptures, no dates are given for several historical incidents because the population was small, life was easy, and the purpose of life was better served by accepting the minimum number of independent elements viz., the power of the Almighty God. Subsequently, the population began to increase and life became complex. Wars, crimes and miseries increased and human intelligence began to see many independent elements and began to question even about the existence of God. It believed in what it actually observed. If there be inter-mundane God, why should there be so a much misery in our world ? If He is supra-mundane, who has created the space between Him and the Universe and between Him and His children ? Human knowledge thus lapsed into the consideration of more independent elements. Chemistry began to consider the nature of 92 to 96 elements. In place of one human family living in ancient times in the North Asia, we created more nations and more histories. The desire for finding the temporal origin of everything and of the Universe has been born recently by historical studies. In former times especially in the East, there were histories of culture and not histories of merchants which lead us to the history of objects instead of history of culture. In the East (especially in India) there is abundant literature to show that life and the Universe began with spirit, not with matter. The Indian life began with Satyug (the golden age of the Universe). India then believed in one independent element viz, God or spirit.

We shall never secure a true answer or a true method if we move within a large number of independent elements viz., time, space, cause, effect, observer, matter, energy, electron, proton etc. Unless the truth of all these independent elements is known, it is not possible to know the age of the Universe. A wrong method of approach is due to some fundamental error in culture. In the modern historical culture error has become standardised. The greatest sin in our life consists in error in observation. A man does not know that he is born when he is born and tries to give his birth date.

It is necessary to find a simple and clear method of thought which may bind together all the observed facts and all the known and unknown facts. By a simple system, I do not mean the one which the student will have the least trouble in assimilating but the one which contains the fewest possible mutually independent elements. If there are more independent elements, their contents will keep a remainder which will not come within knowledge.

Historical method gives a wrong view of the Universe and makes us think as if the theory of evolution is correct.

The theory of relativity has saved us from this kind of erroneous thinking and several intelligent men have begun to realise that to conceive unimportance of time is the gate of wisdom. It is simple because it contains fewest possible independent elements. Many persons find it difficult to understand that theory. Therefore historical method still persists. It is difficult to give up an objective measure in the waking condition as it is in the dream condition.

When there is a force of life it is difficult to assume a velocity which will take an objective thinker outside his system and therefore, the old problems will continue to give trouble in politics, economics, sociology and astronomy and astrology. For an ignorant man, the standard of reality is his waking state. For a man of wisdom the standard of reality is reality itself. Prof. Milne says that the real is prior to the division into related and opposed complementaries which division is all that is meant by creation.

We should not forget that quantity of time will exist where there are more than one independent elements as in the sphere of life and quality of time will exist when there is one independent element as in conciousness.

Evolutionists being incapable of understanding the whole, without representing it to themselves as a chain, one link of which is connected with the other, are like the four blind men in the Indian fable who begin to feel an elephant in different places. One of them who holds the leg affirms that the elephant is like a pillar and we must somehow find the origin and age of the pillar. Another who holds the tail says that the elephant is like a thick rope and we must find the origin and age of the rope. Another who feels the tail after the leg considers that the rope must have evolved from the pillar. But after all we know that it is an elephant i. e. a single being unknown to men who are blind or whose vision is limited to more than one independent element.

The absence of the quantity of time is unthinkable in the state in which it appears but it is not continuous in any two states. By sensation we learn to know the things in space and time. By mental activity we learn to know the relativity of space and time. So long as the present human culture will continue to be historical, we shall continuously create our universe from our observations and we shall create the observers also and the method of objective observations. In this condition the temporal **origin of the Universe begins with the historical method and the Universe will last as long as that method will last.** It will end with the end of that method i. e. when a new a-historical culture will begin,

In a-historical culture, there are few independent elements. The observer, the Universe, time, space, motion, causation, order, design etc.

are not separate. All these combined make a field and then we have only to find a field-law. In a field, extension in space and order in time is a relation within a percepient event.

Prof. Schrodinger says in his small but important book on "Life" (page 75) that the device by which an organism maintains itself really consists in continually sucking orderliness from its environment. This principle applies not only to individual beings but also to cosmic life orders.

If I draw a line and in continuation of it can only be conscious of the point momentarily occupied by the pencil, so that at every point the drawn parts of the line are forgotten, I shall continually be at the starting point of the line and no line as a whole will be produced. Similarly, if we wake up next morning with the same human measure, we shall find the continuation of the same universe and we shall find that humanity does not progress. We shall then observe a mechanical universe with a mechanical time arrived at by a mechanical human measure.

Consciousness of wholeness requires a different kind of culture. For this purpose, all the national histories and geographies of the world will have to be destroyed without any fear of the destruction of real culture. Then our Universe will begin with a golden age and there will be permanent peace in the world. The origin and age of the Universe, therefore, depends on human culture, and its quantity of time is equal to that culture.

The infinity of the Universe belongs to the spiritual, not to the physical part of it. Our experience of an endless duration therein is an empty shadow of the infinity of possibilities contained in its spiritual existence. There is, therefore, no need to go to the beginning or end of the Universe to find its duration. It is four-dimensionally to be found everywhere within the physical universe. Our incapacity is mainly due to natural disposition to apply to the Universe as a totality, a point of view which only holds good in a relative field. The time of the Universe can have no outer but inner limit, by which it is related not to an endless succession of events but to life and consciousness. The dynamic relations between specialised or even mechanically isolated parts of the Universe is very different from considering the dynamics by which the Universe as a totality is limited.

The cosmic order may be in a straight line or in a curved line. It is not in a straight line because a straight line has a beginning and an end. A straight line cannot be seen without its end. If the cosmos exists in a curved line, its origin and age is equal to its measure and the theory of relativity will apply. If there is a cosmic periodicity, it can be seen either by a God who is absolute eternal and omnipresent or by a God whose life begins and ends with that periodicity. An eternal and omnipresent God cannot see any temporal events because His nature is not to see any divisions. A God who remains and ends with a cosmic periodicity will be a limited God and will only be able to see a curved line. The origin and age of that cosmos will depend on the origin and age of that kind of cosmic measure and the theory of Relativity will apply.

There is present and future in the objective process. But the past is known by present knowledge.. Therefore, the object of thought will be the speculation itself, and there will be a curvature of the situation. Human vision and human knowledge move from one circle to another circle. The Universe as known to man does not move in a straight line but moves in a circle. This circle grows with the growth of the number of visions and voices.

In a Universe of a commercial culture, there is more consumption, more production and more activity. In this culture, we experience small circles with rapid curves. Here space decreases, speed increases and we require time-pieces. In a spiritual culture, there is less consumption, less production, less population and less activity. Then there will be large circles with slow curves. Then speed will decrease and space will increase.

In India, the God of production is called Brahma with a life of 4,320,000,000 human year, of which 120.533,054 years have passed. When the God of integral education will arise and spiritul culture will spread, the Universe known to man will have a different curvature with a different time-space measure. The temporal origin and age of the Universal cycle is therefore equal to the origin and age of the measure which depends on the nature of a field of culture through which it passes.

CHAPTER 2

New Logic and New Science.

As there are alternate stand–points in physics, so there are alternate stand–points in logic leading to different logical systems. We can look at an object from one particular point of view at a time and have consequently the knowledge of only one aspect or character of it. In logic also, we can view things from one particular stand–point and construct a system of logic on the basis of it. Similarly contradictory characters like change and permanance, unity and diversity may belong to the Universe with respect to its different aspect. If logicians keep these facts in mind, the conflict of extremes in logic may be avoided and what is more, they may meet.

There are different levals of experience which reveal different orders of the Universe. What the reality of a thing is, and what Reality as a whole may be, we can know only through our experiences. Ordinarly, three levels of human experience are distinguished, namely, waking, dreaming and dreamless sleep. Again, the dream is not a dream at the time of dreaming. To these, we may add a fourth, viz. transcendental experience (turiya) attained through yoga or perfect concentration and restraint of mind, If we accept waking experience as the source of the knowledge of Reality, there is no reason why we should not admit the other types of experience as capable of giving us a knowledge of it. The indeterminate is as much an aspect of Reality and a content of experience as the definite and the determinate. The place of the indefinite in logic must, therefore, be recognised and its relation to the definite properly discussed and explained. So, we must admit other values in logic than truth and falsity. That is to say, we should have a multi-valued logic in which we may speak of such logical values as "neither true–nor–false" i. e. the natural, the indeterminable, and the undecidable or 'not–true–but–not–false' i. e. the doubtful or "the unveriable–but–not–non–sensical" and the like. These are called anirvachaniya in the Indian method of thinking.

If we admit that Reality is many–sided and multi–faced, we should replace the categories of pure differenee by others like identity–in–difference, identity and difference, identity in and above difference etc.

In physics, also during the last twenty years, a number of fundamental physical problems have emerged which require new methods. The dimentional variables are in-appropriate and only dimensionless methods provide insight into basic problems. In these new methods, variables of length, time and mass are expressed in dimensionless form. The dimensionless theory uses angle but knows nothing of single lengths. To speak of the "length of a side" is misleading. Lengths only possesss fundamental meaning when coupled as a dimensionless radio. Linear metric and dimensional quantities enjoy restricted validity and only become fully reliable when combined to form dimensionless groups. In the uew science of physics, no external linear measures are to be assumed and therefore the basic expressions are dimensionless. The system of angles of a static point, lattice or molecule, or of a changing angular pattern is represented directly in terms of angles which do not require reference to arbitnary external measures. As in dream, so in the waking condition, also in the case of astrology. The various procedures of linear measurement, the measures used, the interactions employed and the quantitative relations obtained are all treated as a part of the system. The system may be conceived as defined by angular relations and all processes as based ultimately on the determination of angular equalities and the stability or instability of patterns.

Any theory which studies simple systems one by one necessarily neglects their interactions. Therefore, we should drop lengths and substitute angles. Constant angles determinate the stable structure of matter. The long emphasis on linear measurements and dimensional theories distorts cur conception of physical nature and therefore Indian logic takes into cosideration the experiences of the waking state, dream state and of sound sleep. The presence of one universal length in any dimensional deductions is a necessary property of any dimensionless theory. This method will also enable us to understand the Ras-Lila of Lord Shri Krishna. A field-model will prove as a powerful tool in analytical mechanics for the description of particle-motions subject to a central force. A particle remains in motion within a certain range of the field. A generalisation of the principle of least action is needed to cover not only the motion of single particles but also universal interactions among particles. The world line which is the event-history of a particle follows the shortest possible paths determined by the curvatures bent upon the continuum by gravitational interaction. Gravitation brings the total curvature of space-time continuum to a minimum. Gravitation represents a continued effort for the Universe to straighten out. In any case, for a good and sound logic, there should be minimum number of independent elements. The higher the level, the smaller is its population of instances. There are fewer cultures than organisms.

The time as realised by the successive nows of the observing subject is different from the time involved in the objective motion of sense objects or points. The determination of the physical laws simply reflects the determinisum of the method of inference i. e. individual measure or individual Maya.

Truth is realised not so much by the affirmation of what is, as by the elimination of what is only relative. Man must try to unlearn illusory knowledge. We may have to open special schools for teaching how to unlearn illusory knowledge.

If the Universe is a point singularity in time, it cannot be the whole Universe. We can only find local cosmical rest or local cosmical motion. Cosmic measure depends on the quality of the culture which is of four kinds viz :—

(a) Iron age depends on sensual cutture.
(b) Copper age depends on intellectual culture.

(c) Silver age begins with superamental culture.

(d) Golden age begins with spiritual culture.

Sense perceptions can only be repeated by restoring all the conditions under which they arise. Where the subjective psychic life is undeveloped, or unable to assert itself, conscionesss is at the mercy of sense objects. In an observer which is limitted to the space of immediate sense perception, no consciousness of a world-space or of a Universe can arise,

The problem of creation arises on the side of a separate Universe, not on the side of the wholeness of the Universe. The perceptual extension does not involve the assertion of extended substance but rather that extension is a relation within a percipient event. In such cases, we can only get a quality of time, not a quantity of time. In dreams, we create a quantity of time out of the quality of time by multiplying the number of observations. A similar situation exists in the waking condition. In the waking condition also, we create a quantity of time by a number of similar observations. There is a curvature of time-space in the dream state and in the waking state. It is due to this curvature that waking state destroys the dream completely and the dream-state destroys the waking state completely.

The analytic method of the Western countries is not able to find the proper timing of the cosmos, because it cannot find its process and its form. They find a chaos and not a cosmos. The synthetic method of the Eastern countries finds a unitary process and form and therefore gives proper timings not only for the parts but for the hierarchy of the Universe which is never divided. They can therefore give a plan of life both for the individual and the Society. The exploitation of the quantitative method, the development of objective elements in man's conception of the Universe has resulted in the West in the decline of subjective humanism and rationalism. Unity without diversity is identity and diversity without unity is chaos. Physical causes in general and fields of force in particular are provisional methods of thought which lose any claim to independent reality once the way things happen can be described in a unitary manner.

The object set in space and formed of matter follows the necessity of quantitative law. But man cannot think by this alone. The symbols of number and quantity are appropriate to the enumeration of analysis, standardisation and accumulation of magnitude but they tend to neglect order, development, structure and quality. The centimetre, the second, the gram, the horse-power, the vote, the Rupee, the nationalisation, these quantities or number symbols are considered effective instruments because they encourage man to go ahead without considering the methods by which they are obtained or the results they will produce.

The quantitative science has a tendency to view man, society and the Universe objectively. This method lacks any principle of integration. Therefore, we get a multi-verse, not a Universe. Memory creates a time-sense in man, but memory does not give a unitary process.

CHAPTER III

Age of the individual

As the space between the individuals is not fundamental, there are not many individuals. As in dream, so in the waking condition. The question of the age is similar to the question of the age of the system. Some thinkers believe that the birth of the individual is due to their past Karmas, but this is not correct. There are no past Karmas for the individuals seen in the dream and there are no past Karmas for the individuals seen in the waking state. The question of Karmas can arise only after the system enters in the knowledge of the observer. As there are no linear measures external to the system, there are not many individuals. All objective view-points lead to absurd methods of thinking and do not give a right solution. We have now got, in modern science a relativity of Geometry of time and space.

What we see are events and not objects. Events are not penetable as matter is supposed to be. Space-time is not the frame-work of the world of nature but of the world of our sense-perception. The laws of nature tell us nothing about nature but certainly something about ourselves. The mistake lies in taking our percepts to be the physical world. The dream which we call waking perceptions have only a very little more resemblance than the fantastic dreams of sleep.

There are two separate ways of attacking the structure of the Universe, the one is to make use of every available piece of empirical knowledge known to be valid on the small scale; the other is to begin with the situation actually presented to us by the totality of things without supposing ourselves to know anything (to start with) of the fact used in the first method. In the second method, we attempt a complete reconstruction of physics from the bottom upward on an axiomatic basis. The second method frees itself from the presuppositions tacitly implied in the first method. When these pre-suppositions are removed, it will be seen that the differring possibilities are different descriptions of one and the same entity, descriptions which originate from the tacit adoption of different scales of time. If it is one soul that creates the illusory many (as in dream), then that soul alone will be the subject of wrong knowledge as well as liberation. There are not many ignorant souls in dreams. The Sankhya and Yoga views of many souls can be refuted by pointing out that the Shruti does not suggest the fact of many souls being true. Starting from the apparent fact of plurality of souls (accepted by ignorant men) it proceeds to lay down the conditions of bondage and liberation only viz, that it is one soul that through identification with matter experiences bondage and on its realising its distinction from matter gets emancipated. Plurality appears through a limitted vision only and as such constitutes false knowledge. The text of Swetasvatara Upanished (VI-II) directly refutes the erroneous conception of mnny souls entertained by the materialist Sankhya and Yoga.

The fact that an event occupies a definite amount of space-time does not prove that it has parts. B. Russell says that to some extent each man dreams his own dream and the disentanglemeut of the dream element in our percepts is no easy matter. All adaptation to environment might be regarded as learning to dream. Time space, motion, extension and solidity which characterise material bodies are characters of perception and not characters of the external world. When a man transcends time and space ever so slightly or infrequenty, he will experience propertiey of mind as a whole. The subject and the object by their very interactfon become one system and qualify the dualism that appears to exist.

If the imprisoned soul is regarded as different from the soul set free, it must be admitted that the characterising mark of the indiscreet soul is different from that of the discerning soul. It is one and the same undifferentiated subtle matter that first forms the object of enjoyment as the result of egotism but is finally discarded on the dawn of discrimination. It is one soul that was falsely enamoured of matter and has now grown dispassionate towards it due to the attainment of right knowledge, otherwise there will be discontinuity through the dropping of the original subject. On all these grounds, the Shruti has been rightly interpreted by Shankara as confirming the doctrine of the one soul.

It may be urged that bodage and liberation are posible only when there are a number of souls with differing proprium. If on the contrary, there is one soul both bodage and libration cannot be predictcd of one reality. To this the following replies can be given :—

(1) The Absolute spirit which has no limbs

or members cannot be enclosed even by the three dimensions superimposed upon it. The terminus or ultimate referent of thought cannot be divided into finite personal Gods even like Virat and Hiranyagarbha or a personal saviour or a father in heaven.

(2) There will be futility of spiritual efforts put forth by one soul and sudden success attained by another soul.

According to the Brahma Sutra (2–3–29) also, the soul in man is all–prevading, because the all–pervading Brahma itself is stated to have entered the Universe as the individual soul (Taitariya Upanished II–Vi) which again is stated to be identical with it. This is something like the four–dimensional–continuum of the theory of relativity in which the observer can view the system only from inside.

On this basis, any propositions about the state of a system prior to the moment at which they are given are meaningless. A whole range of times and spaces can be assigned to the same event. Once the choice of the scale of time is fixed, the forms of laws will appear to be determinate. As there is no uniform time and no uniform space, there cannot be many individuals in the world.

The only events which an oberver actually experiences are events at himself. His clock is at himself and records only the epoch of events at himself. The aesthetic self and the aesthetic object are the one-aesthetic cotinuum. Within the aesthetic continuum, there is no distinction between the subjective and the objective. Pure fact is a continuum of ineffable aesthetic qualities, not an external material object, or external individuals.

The popular point of view that "some persons other than myself" have been released from bondage while I still continue in ignorance of my real nature is not accepted by the wise, as it does not point to the right procedure regarding the attainment of liberation. An inwardised mind is a precondition of self-knowledge, while the popular view tends to scatter the mind outwards to the false fleeting show of many individed souls. To remove a possible distrust regarding the fact of one soul uniformly abiding in one's body as well as in other bodies and thus finalise the indisputable truth of the singularity of soul, Brahma tells the Gods (Suta-Samhita III-iv-47) that just as the beholder of a dream (the soul that conjures up a dream, not a tiny creature belonging to the dream world fashioned by the beholder) though himself only one, shines through ignorance as many comprising disciple, preceptor, etc., so also in waking life only one soul, known as the empirical ego (vijnanamaya-jiva) itself appears through mistake as many individual souls characterising as 'I am bound!', 'this is liberated,' 'he is great!' 'this is learned!' 'he is ignorant!' etc.

If it is asked "what do we again by admitting (as suggested above) that there is no distinction between the empirical ego and the many individuals that he visualises to itself, Brahma continues to tell the gods that like unto the dreaming soul (taijasa-jiva), who as the shaper of the dream, is not different from the many apparent individuals composing the dream world, the empirical knower in waking life (Vijnanamaya) through his own ignorance, knows the many individuals of this world as bound, but on him-self attaining to inner light, knows them all to be liberated (Suta-Samhita 111-iv-41-49). The individuals of waking life are imaginative projections of the one soul

(Prajna) that produces and permeates them. The real nature of the empirical knower (Vijnanmaya) also is this spiritual principle (Prajna) that inspirits his individualised being. The show of individual men and things, including his own externalised body visual to him is an illusion. The one soul (Prajna) alone constitutes reality. He, who on waking up to this real nature of eternal life and light, finds others (who are varying shadows of himself and possess no mind of their own) also to be unquestionably free is the best knower of truth (Atmavid–Vara). In its human aspect sociality is compatible with physical independence of differennt attitudes towards oneself, precisely because, the social agent takes all of them except his own attitude in imagination. He does not actually disintegrate into a multiple being because the imaginative attitudes are only supplementary appendices to the single physical attitude connected with the state of his body. But an event which is physically split into several perspective agencies is a group and not a single event. Furthermore, it is not a unified group but a sheer multiplicity of appearances (Ushenko in the philosophy of relativity.)

If the soul which is everywhere, become

conscious of a visual scene constructed so as to present the surroundings as from a particular point of view in space, it will have the illusion of itself being at that point of space.

It may be asked " Why is it that Brahma declares the imagining soul to be the reality, while the individual souls imagined by him to be mere appearances of reality? The reply is" the permanent self-shining principle is what is meant by the word 'I', when the individuals externalised by the seeing self are shadows of his reality. Whatever forms an object of perception or introspection (प्रमातृ-वेद्य or साक्षीभास्य respectively) constitutes an appearance of this reality. The innermost self-shining I i. e. the "I" principle surrounded by sleep or ignorance of its true nature is known as prajna which is the spiritual witness persisting through all changing states of experience, superimposed upon it in ignorance, but with which it feels no arrogation (तादात्म्याध्यास). On the removal of ignorance by spiritual vision, this prajna becomes the turiya atma. What constitutes the 'I' is the conscious principle, the individuals that he knows are in themselves really unconscious. Their visible personalities have only a semblance of reality. The Prajna or one soul persists through all states of experience. Essentially, therefore the Vijnanmaya or empirical knower is not different from Prajna and is born at the time of his vision.

The age of the Universe, also, has no objective content. Given an event, we have to mention an observer in whose now it occurs and the ages are different according to the observers chosen. There is no sense in which it can be said that the Universe is running down independently of an observer. All these differing possibilities are different descriptions of the entity–descriptions which originate from the tacit adoption of different scales of time. In each scale of time, the empirical observer plays an important part. He requires to be liberated by integral education.

If the one soul is liberated through self-knowledge, ignorance cannot again arise and bind the soul, so that all other individuals of the world must get liberated without their own efforts. As in dream, so in the waking condition. To this the reply is:–it has been shown before that bondage and liberation can apply to one soul only, they having no meaning in relation to apparent individuals. Every individual soul, however, may constitute the inmost "I"shining of its own light; it thus can attain liberation through its own self-knowledge and in this liberated state, it will find other individuals–mere reflections of itself–to be undoubtedly delivered from bondage. Every individual soul thus will experience worldy bondage till it is removed by supreme knowledge. Brahma thus prefers the doctrine of one soul to that of many souls.

Gaudapada also concurs with the same view in his Mandukya–Karika (Cha–iv–verses 63–66). The variety of individual beings seen in a dream have no existence apart from the mind of the dreamer. This mind of the dreamer is admittedly an object of perception on the part of the dreamer (tajasa–jiva) only. Thus the mind of the dreamer has no separate entity from the dreamer himself.

In the dream, remembering has a quality differing from that of the dream perception and in virtue of this quality, the rememberance is referred to the past. But the quality is not that of genuine pastness which belongs to the events of history; it is that of a subjective pastness in virtue of which the present remembering is judged (falsely) to refer to something that is objectively past. The same is the case with the past tense remembered in the waking state. It is a past tension remembered in the present tense or present tension.

The various individual' beings seen in the waking state are only objects or tensions of the mind of the waking man (the empirical knower or vijanamaya). Thus his waking mind is an object of perception of the waking man only. Thus the mind has no separate existence from the perceiver (vijanamaya). It consists of his present tense or present tension which creates a particular unit of time for him.

Thus according to the above verses, the various individuals that the soul imagines in dream or in waking state (through which it passes) have no existence apart from the tensions of the mind of one waking observer. Therefore, these individual beings that are projected by the one soul in dream or in waking-state, being composed of mental modifications are reflections of one real being, the inmost 'I'. Like a painted garment, which looks like a garment without being really so, these individual souls appear like living beings (i. e. endowed with sentinnce and feeling) but in reality, they have no consciousness of their own- Thus the principle of consciousness inwardly shining and being felt as the 'I' is the only one soul. This also is another authoritative proof of the doctrine of one soul.

Shri Krishna also confirms the same docterine in the Gita (Cha-XIII, verses 1 and 26): The conscious principle that lights up and reveals the aggregate (such as the mind) called the body or inhabitation is known as the over-seeing soul. This intelligent principle, through lack of discrimination of its real nature, gets indentified with the non-intelligent habitation and becomes the conceiver (kalpaka) of various individual beings, who are really devoid of consciousness. Thus the one intelligent principle only, according to the Gita, is the object of bondage and liberation.

Brahma Gita (V. 34) sums up the purport of the sixth chapter of the Chhandogya Upanishad beginning with 'Sadeva Somyedam' and ending with "Tattejo-srujata" which lays down that it is only one soul associated with past tensions remembered in the present tense that proves to be the creator of the world. The creator has to reckon upon the antecedent actions at the time of creation. If the innermost intelligent 'I' is not taken to be the real creator (the first cause) of the Universe, then, by knowing the one, everything cannot be known. The same reasons which lead to the rejection of substance lead also to the rejection of things and persons as valid concepts. As the destruction of dream is complete at the time of waking, so all the effects of ignorance will vanish with the rise of wisdom.

As space is an illusion and is due to bodily attachment, the distinction between inside and outside becomes unreal. Distance is defined in modern science by certain operations of measurements and not with reference to non-sensical conceptions such as the amount of emptiness between two points. Similarly, time is defined by certain operations of measurements. If the past is to be continued, we have to continue the same unit of time and this is Maya, or objective vision. Subjective vision cannot be objectified. Number does not enter into what cannot be objectified.

Perceptual space and perceptual time are within the perceptual event. The structure of time and space are not really determined until the functions of the co-ordinates are known. Status of actuality or potentiality of a perceived region or quantity of time depends not so much on the region itself or on the time-period as on the mode of the percipient's reactions to it. If distance and place are inconceivable in the absence of the mind of which they are the ideas, the independent existence of figure which is the limitation of distance and of motion which is change of place must be equally inconceivable.

Our universe can be made objectiveiy true as soon as the point of reference is included in the statement of our knowledge. But we should not forget that space is a function of the distribution of masses or energies and so is time.

CHAPTER 4

Origin and age of Social Fields.

One father told me once that his daughter was ill-treated by her husband and by her mother-in-law. He described the nature of ill-treatment in detail to me and as I knew the family, I felt for his daughter. At the same night, I got a dream about this incident and in dream also I felt sorrow for the unhappy wife. After waking from the dream, I found that the creation of many persons in the dream was actually the creation of one person and the whole trouble also belonged to one man i. e. the dreaming person. In the waking condition we attribute the trouble to other persons but the opposite family may not be feeling the same kind of trouble. Therefore the whole sorrow or trouble belongs to one person, and the time–space world belongs to one person. When many appear in place of one, that is due to Maya or measure. As in drerm, so in the waking condition.

We have a multiplicity of egos which are not independent beings. The whole creation is distributed in the ego–space but no ego has a definite location and definite time. It requires a now and a here at the point at which it makes contact with objective space–time, and the objective space–time world is the indispensable medium of communication between one ego and another. The egos may be pictured symbolically as prisoners, each in a separate cell, who cannot know each other completely or exchange positions but can communicate by raffing on the walls.

The word "object" is used in two different senses, first, as a physical particle such as an atom or electron and second, as a correlative of subject in the subject–object relation, that is, merely as something that can be talked about. Modern science has changed our views with respect to the object in the first sense, but not at all with respect to the object in the second sense. Therefore, there are not many observers or individuals but a " co–ordinate system." Relativity has nothing to do with the particular position in space–time, or the particular motion that an observer has but only with the position and motion he assigns to himself (i. e. with the co–ordinate systems he adopts) and these he can choose as he pleases. It is incorrect to say that " there is conferred on me an origin of co–ordinates." I am on the earth but if I am considering the dymamics of the solar–system I choose an origin of co-ordinates in the sun, as every astronomer has done for the last few centuries. I do not need to invoke an "objective space" for my presence at this particular space because there is no particular place. A question naturally arises here that if there are to be many equally justified systems, then there must be many conscious beings. But one conscious being is enough to control all the systems. As in dream, so in the waking condition. There is in fact one conscious being, because the differences in place and time and motion between terrestrial observers, are utterly negligible on the cosmic scale, so that all the data with which a spiritual man works count as observations of one person alone.

If I begin to think that there are many individuals, I require a fundamental space continuum and a momentum continuum. These are not fundamental according to the modern Science. Everything that we see is a field–vibration which contain non–linear vibrations. Non-linear vibrations are due to the following three causes:–

(1) Differential equations
(2) Boundary conditions
(3) Tensor and stress equations.

Stability is secured in the same way as in the dream state. But if there is a disturbance, the field obtains a new–time-space continuum. Therefore, we have not to take into consideration the motion of the individuals but motion of the system. Motion of the system depends on the density, luminocity, and radius. These three combind create the waking state, dream state and sound sleep. When density is very great, a man gets sleep. When the density is slightly reduced, we get dream or have a waking state. Gravitation is reduced to zero in sound sleep and in the spiritual state. It is not zero in the dream state and the waking state. Where the gravitation is not zero, one can get an experience of a social field and a time–space universe. There is no stationary clock and a rigid rod. The methods used to determine electron momentum or an individual life are entirely different from those necessary to measure a transit time and a velocity. Since no external linear measures are to be assumed, the basic expressions must be dimensionless. The internal spatial structure of a social system can only be represented in terms of angles, which do not require reference to arbitrary external measures. The various procedures of non–linear measurement, the measures used, the inter-actions employed and the quantitative relations obtained are all treated as part of the system or process of the system under observation.

Constant angles determine the stable structure of matter. The elimination of linear matric has the advantage that it leads automatically to the appearance of one fundamental length in any linear laws which may be derivable from a dimensionless foundation. Any two angularly similar systems, represented by the same set of dimensionless parameters must be indistinguishable and this implies that any two similar stable patterns of society must in a dimensional representation be of the same scale. This means that a universal length associated with all similar individuals must be introduced in transformation from a dimensionless to a dimensional representation. This leads to the creation of many out of one, and to the creation of different periods of a man's life. This also leads to structural angles as seen in Astrology.

It is possible to choose the initial probablity in an infinite number of ways, each separately consistent. The problem is how to try to choose the best. The late American philosopher. Whitehead and the present English philosopher Russel are of the opinion that where there is a choice of postulates, we should choose those that enable us to draw most consequences. This is also of the opinion of Prof. Einstein. It is also the highest opinion of the best philosophers of India. Therefore, one set of assumptions is better than another set if the first requires fewer special rules.

The future of a particle depends on the place, it actually occupies in the field. Interference by an external agency or by internal qualities will result in changing the structure of the field. Due to intervention of the common operater, the ensemble of all potential surfaces will suffer corresponding curvatures. This is experienced when a man wakes up from a dream or when a waking man goes in a dream condition. It is also experienced in the waking state when a public leader is accepted by the public as a dictator. His intervention creates curvatures of many potential surfaces of individuals who become his disciples. Intrinsic structural changes whether in the individual or in the society may transform the original constraints. Morden field physics studies such warpings of the continuum. The whole method depends on our being able to ask our questions in a definite time. A Unitary Science of all types of inter-acting fields would imply the highest attainable bend of human knowledge, as was said long ago by Laplace and in our day voiced by Einsetin. We can bring the result of Indian philosophy in support of this if we consider the three states viz. Waking, dream and sound sleep, which are common to all human beings.

Experimentalists in the psychological and social sciences usually recognise that they cannot reconstruct in detail social phenomena which are complex or prolonged, such as, trade relationships between adjacent primitive cultures. If a state is simple like an eye-blink or the pith of a sound, its similarity to other eye-blinks or other sounds is immediately discernible. If a state is complex, like a political revolution, or a family having many members it is diffcult to find an equivalent. Two states can be compared if there is some similarity of structure, response, event or act. Therefore, if we limit our investigation to the three states viz. waking, dream and sound sleep, we can get a good basis for comparison. Science of life is possible when common features are recognisable. Every government binds its subject to its own constitution. But there are differences in different countries. Social problems will be more difficult when large fields or organisations spring up and become unfamiliar to individuals who cannot conceive life as a meaningful whole. Errors gain great vitality when there is no outside corrective. As in dream, so in the waking condition. The merits and demerits of control in the constitution of various nations invade the individual fields also. The individual in morden times, has therefore, to hunt for a needle in the haystack.

A thought which is the product of one unit of time cannot understand the product of another unit of time. Our body-idea and our national ideas bring many restrictions in our perceptions. Therefore, we must approach difficult problems negatively. Negative thinking is the highest from of understanding i. e. we must negate our pre-conceptions. As in dream, so in the waking condition.

A man controls his field by the hypothesis he has chosen to test, the variables he has chosen to manipulate, ignore and hold constadt, the language he has chosen in which to define and describe. It is impossible for him to survey a field beyond a previously pared dimension. A man cannot alight at his station, if he is deeply thinking of other matters in his train. He will be under a hundred influences darting into his circumference. He can control his field to the extent that he uses right kind of choices and if he uses the right kind of recipes.

Appendix

Quality and Quantity

The western method of finding the origin and stucture of the Universe is objective. They want to find out more stars by larger telescope and the time of the Universe by the rate of its expansion. The eastern method is to reduce the number of material conceptions by philosophical analysis to their fewer fundamental sources or causes or by overcoming the defects of the senses. A tune or sound passes below the time of human audition when its progression through time falls to about one–twentieth of normal. A similar increase in velocity through time will equaliy render it inaudible. This sort of thing holds good in respect of light and also of tangibility. The notion of different rates of motion through time as brought about, simply by differont velocities of matter through space is to–day a familiar physical conception.

Therefore, the whole earth and the sky and all that they contain with all other members of the human race, may be no more than forms generated in the brain of the individual necessary for each one of us, oneself–supposed to be engaged in dreaming himself a Universe. It is, of course, in a sense impossible to prove that anything arousing sensation in us has real existence. Real existence means self--existence or eternal existence.

A passenger in a train gets more different impressions of the world than one who is sitting on the top of the train or one who is flying above the train. The pressure of events creates a time-measure according to the quality and quantity of pressure. In the higher sphere of life, a chronological sequence of events is replaced by reduction of pressure on situations. There, the condition of contact is not a process but, a state of being. In the building of a spiritual life, the interplay of events is not a succession of incidents but of grouping of simultaneous contact. For the spiritual life, beginning consists in the institution of a condition and end consists in the completion of that condition. It is like the unification of song or like reading the summary of a book. It is the nucleation from time into positive unity and therefore changes the idea of the human universe. A ten minutes life of the spritualised mind will show a different time-scale than a million years of the earth's history. Therefore, in the Indian religious literature, we have four kinds of dissolution of the Universe as follows:–

(a) daily perceptible changes. (नित्य प्रलय)

(b) dissolution at the time of the completion of Brahma's day. (नैमित्तिक प्रलय)

(c) dissolution at the time of (everything) merging in original nature. (प्राकृत प्रलय)

(d) Eternal negation of all changes in the spirit by negating the waking, dream and sound–sleep states. (आत्यन्तिक प्रलय)

The first three are objective dissolution of the Universe, the last dissolution is obtained by subjective method. The last method is considered to be the best method.

At present, the population of the world is fast increasing and therefore the economic problem has become so mportant that men have no time for thinking about such deep problems. We are now moving in blind collectivism which produces erroneous measures for ultimate truths. The resolution cf the last Indian National Congress for socialist pattern of society may enables to solve some economic problems but it will not give us truth of human life and truth of the universe. Economic and social life requires time for its development. Therefore, it requires a quantity of time.

Spiritual knowledge requires integral education and non–historical culture. For that purpose, quantity of time has no meaning. In ordinary life, we try to accept quantitative attributes of a reality which is only a symbol or a formula. All we know is that events, both in our consciousness and in what we observe of our environment occur consistently compared with one another and in the same way and in the same conditions. Our idea of time is in their sequence and in their speed which we can compare one with another and which we know to be altered by change in conditions, for instance by difference in temperature (or according to the theory of relativity) by position in a gravitation field or by movement. Hence, comes our idea of something passing which we can measure by events. From that arises the relativist's argument that space and time have characteristics which he identifies with the actual measure of material and its behaviour. But if we abandon the ideas space and time as existing entities with the attributes of measurable dimensions, we are forced to the position that space and time are imaginary ideals approached but not exactly reached by material measurements, these measurements being subject to variation in consequence of the properties of matter and the view point of the method of observation. The differences of measures are not differences of real time (which does not exist), but the mechanical measure of its passing. For any quantiative appreciation, space and time must necessarily be uniform. Where they depart from, we must be able to find out some thing from which they depart. This is essential to the idea of consistency.

Time being a measure of change would appear to have no meaning except in the presence of a measure of position. In empty space, position direction and time seem inconceivable. It is only the presence of other materials that can determine the difference in time movements. When Nachiketa asked Yama, the God of death "what happens after death ?" the latter replied that time does not exist where other materials do not exist. Therefore death exists only for those who see any material other than the spirit. Our observation will reach the ideal state when the grativition field will be reduced to nothing as in our going to sound sleep state, or to a spiritual state.

A structure of time and space is concerned with a gravitation field, which Shree Shankracharya calls युष्मात्-अस्मत् प्रत्यय. A behaviour in that field is described as being as if in space and time which are distorted according to the nature of the field. In other words, the distortion of time and space is due to a varying local condition. The spiritual substance cannot be identified with local measures.

Organised group thinking is also repetitive and has a local measure of time and space. It gives a relative knowledge. A mind which is burdend with such knowledge will not be able to make self-reflection. A quiet mind is necessry for spiritual transformation and for enjoying eternal life. For this we require integral education and a new structure of society in which a cultured class must continuously exist to guide the uncultured majority who only want material happiness.

Unitary thought requires that the cycle of every process of reasoning should be completed so that it begins and ends with the process concepts. As in dream, so in the waking condition. Man can understand himself and the Universe as a system in which dominant formative process organises an organic hierarchy of such process in an environment of similar processes.

According to the Hindu mythology, Kak–Bhushadi saw the whole universe in the body of Ram in a few moments, similarly, the sage Markendeya, Arjun and Yashoda had seen cycles of the Universe in the body of God. But there was no Universe outside the body of God. Modern Science also says that to an observer inside the system, the system has all the properties of infinite space ahd infinite time. If we change our system by integral education, many terrestrial years will apear as one day. It is not necessary to bind ourselves to any calender which exists temporarily during our short stay on the earth.

The question of time arises by a class of relations characterising change. When the relations are quantitative, we get a quantity of time. Modern physical science outlines a programme of research towards the establisment of a unitary theory which will use non–quantitative basic concepts to provide a theory of measurement of time. This will agree with the conception of time given in the highest Indian philosophy, and will change quantity into quality. We are living not merely in an epoch of fresh discoveries but at the birth of a new world out-look. As light exerts some pressure on life, we experience pressure of differnt kinds of light from different stars found in astrology for the different birth-times of different individuals. This process of light measurement brings indetermancy in atomic physics and to the various time-scales in the waking and dream states of various living beings.

For developing field physics, we require a science of situations. Then only we shall obtain the unity of mind, life and matter. A unitary system deals with the main form of the system rather than its component parts. Unity means one general form. Dualistic method gives two or more mutually exclusive forms. Economic regeneration of society will make a dualistic form viz. mind and matter. It will not overcome the dualism of conscious purpose and material necessity and will create more confusion than development. We must find a method of unity in which a-symmetry decreases. It is a mistake to believe that economic symmetry only will bring about the desired unification. All the happiness of man does not come from money. The Western nations have tried it and have failed. Fears cannot be conquered unless desires are conquered. Equality of opportunity encourages the individuals but they must be supplied with direct knowledge of universals which can assist them to escape the tyranny of local power and habit aud to develop a universal form of life. Mere economically satisfied man will seek union with woman instead of with God. This method will leave the dualism unsolved. The economic age is an age of quantity. It tries to transfer some quantity from one place to another. It is concerned with the distribution of wealth, not with the control of consumption. In the philosophy of quantity, a man has to obey many masters to supply his many wants. In the philosophy of quality, his dependence is much reduced.

During the last four hundred years, the hierarchy of power in the West and East has shifted from religious to political elements and from political to economic elements, with the result that there has been no restraint in the multiplication of power, wealth, territory or family. We now want a control over consumption, not a method of distribution. Modern man is intoxicated by the number of quantity. He wants a quantity of time also for the age of the Universe. Man-power, horse-power, money-power, water-power, electric-power are dominated by manipulations of quantity symbols.

Spiritual power has nothing to do with quantity. Nobody believes in the existence of many Gods. A quantitative philosophy sees man and society objectively. Instead of the subject dominating the object, the objects are dominanting the subject. An individual in identifying his will with the economic interests of a particular class forfits his own right to think. But the rise of thinking nations of Asia may create a new field for world-betterment.

Right thinking is a rare gift of a man of genius. In Marx and his followers material necessity conquered idealistic thought. Truth lies not in a constructed synthesis of partial conceptions but in a single vision of what is always single. Unitary man is marked by his conviction of a universal formative process which unites him with God and nature. Partial love implies partial hate. There is no honesty where unity is lacking. One dissociated man cannot guide another. Compassion also cannot cure sadism which is its own compliment. The dissociation is the fact behind both. Fear lies deep in a dissociated man and leads him to place a mistaken belief in security. Fear and its consequences can be eliminated only by action leading to continued development of unitary thinking. Truth is a system of symbols whose structure confirms to the whole pattern of feeling, thought and action and integrates all processes into one dominant unitary process. The substitution of society for God robs the individual of his guide, the universal ceases to be neutral and comes down on the side of community. The individual loses his self–assurance and passes into the hands of a distorted social man.

The question of the origin of the Universe exists for a distorted man. When a man finds a universal process within himself, the nature of his struggle changes. A unitary man does not leave the task of struggle to others. His struggle will include a control of birth, life and control of death. His universe is with himself.

Asia is now awake and stirring and will

produce different kind of leaders, who will give an eastern method of unity and harmony.

From the point of view of Eastern philosophy, the structure of the Universe is not quantitative. Man puts quantity into nature by applying the quantitative process of measurement and hence the question of the quantity of time (mentioned in the introduction) for the Universe. During the last four hundred years in Europe there has been a continued differentiation of knowledge and of social organisation. It has been an age of quantitative technique, but the East will make a counter–attack by their unitary culture and change the quantity into higher quality.

A universe can not be made with a different number of elementary particles or with a different period of time, consistently with the scheme of definitions by which the number of particles or a period of time is assigned to a system or state. Periodicity is a lattice structure in time and can not be separated from the system. As in dream, so in the waking condition.

The datum of physical science is not awareness of a sensation but awareness that a sensation is like or different from a sensation which

CC0. In Public Domain. Sri Sri Anandamayee Aṣhram Collection, Varanasi

we formerly had. Granting this, the sensation of one person alone provides sufficient material for structural analysis. Such analysis would never take us outside a single consciousness and therefore would give no indication of a world external to that consciousness.

It is now realised in Science that the law of increase of mass with velocity automatically results from the ingrained form of thought which separates the four-fold order of events into a three fold order of space and an order of time. When knowledge is formulated in a frame which compels us to separate a time-dimension from the fourfold order to which it belongs, a component called mass is separated and it requires no very profound study of the conditions of separation to see how the separated component is related to the rest of the vector which prescribes the velocity of the system. It is this relation which is re-discovered when we determine experimentally the change of mass with velocity. This creates a separation of an individual and a quantity of time in a universal whole.

As a result of communication of structural knowledge, we soon find that the structural contents of different consciousness are not wholly independent. When we find a non–correlation (as in waking from a dream), the independence that was seen in the dream was not an individual possession of several members, it was characteristic only of the particular combination that is studied.

The experimenter has to create the procedure for himself and he is limited to the extent that he must fit it within four dimensions. He limits his field by the hypothesis he has chosen, the variables he has chosen to manipulate, ignore or hold constant, the language he has chosen in which to define and describe. It is this choice which initially determines for him what he will regard as a state.

A certain physical disturbances entering the brain cells via the optic nerves occasions the sensation of time–succession, the moment of greater entropy being felt to be later.

The effect of measurement (MAYA) is such that it appears to convert a pure case into a mixture. As in dream, so in the waking condition.

Time has become associated with space–events in physics simply because we choose to measure time in terms of space-measurements. But it is possible to measure time in terms of other measurements. Instead of the constant velocity of light, it may be found convenient to measure radiation in terms of the energy-radiated per unit time, and then we get energy-time. Everything depends on the function which time-measurement can perform in physics. A wide variety of such discordant scales are legitimate. A new scale may also remove an antagonism between microscopie and macroscopic physics. Two pieces of matter placed anywhere at all in an otherwise empty universe will influence one another in many ways i. e. with respect to motion, temperature, (radiation) or psychologically by the five senses and the mind. Then the time period will be different according to the nature of measure used. From one point of view all changes may appear to be illusions. As in dream so in the waking condition.

Infinite time cannot be conceived by anybody. Finite but unbounded time is difficult to conceive but not impossible. Such a time is experienced in the dream condition. Time is finite and boundless not by great duration but by a re-entrant form i. e. by change of state. It is inconceivable that there was once a moment with no moment preceding it, yet, a beginning of time is conceivable with the beginning of a new state or situation. Time depends on events and an event happens when it takes place, i. e. when it takes a place or a position. The new science provides a stand-point in which the centre of interest is shifted from the one wav quantity of time to the quality of time possessed by the system as a whole.

In philosophical and scientific symbolism, we find that perception can be referred either to a Universe which once began or to a Universe with no beginning according to the choice of the field. It is possible to accept the reality of time by perception of the motion of our body along with the earth round the sun and call one circle a year. It is also possible to negate the reality of time by considering that I am the soul and not the body. A disembodied observer will not experience the same rate of time as the embodied observer. The velocities of observers and their communications become the criteria for succession or simultaneity.

When I speak to another man, I am simply speaking to myself. There cannot be two separate minds as in that case the correspondence between them cannot be explained. Two clocks, at the time of mutual conversation work on the same principle and at the same rate because the mind that conceives them has one time-unit. As in dream, so in the waking condition. When two lovers look into each other's eyes, they become aware that their thoughts and joys are numerically one, because there is one time-unit governing two bodies.

Every stage of evolution does possess all the three gunas of Maya, though in different proportion. Time sense begins when attention is given to the proportion and not to the gunas. If we lay aside the comprehensive view of the Universe even for a moment, we take reality to pieces which then become abstractions and we find ourselves in a struggle with inimical forces without end.

A cultural history can be described in an excellent manner, if we do not give dates. This method has been adopted in the history of Ramayana and the Mahabharat and the Puranas. If we try to give dates, we make the student an embodied observer and then he will never become a religious or a spiritual man. This is the reason why politicians and members of parliaments do not become philosophers. This is also the reason why the department of education should be placed in the hands of the men of the Church and not in the hands of the ministers of the State.

The Universe as known to man is a kind of relationship. Nothing single or detached can become an object for us. The appearance of constants in nature are not in nature at all, they are in the relation and that relation can be attended to from the end of the subject or from the end of the object. A separated God or on external Universe cannot become an object of knowledge for us. It is usual to think that we live in a common world and that by some mental process we can arrive at an understanding of what it is. This position cannot be maintained. The only world which a man can know is the one related to him and revolving round him. It is only because we think we are born that we can speak of origin. But nobody has seen his own birth. Were we immortal, we could not understand how anything can have an origin. Time is no longer single. It is married to space, and many wonderful universes have been constructed from this marriage. Time is a tiny and fragile instrument and serves for not much more than a short human life of the waking period. It disappears in sound sleep and is newly created in dream. For a better culture, it would be an act of wisdom to destroy all political and national histories. We must substitute cultural histories by which we may be able to understand the relativity of our own experience.

The Universe is the most inclusive totality that can be imagined. If this is so, how can we ascribe an age to the Universe and what does it imply ? The grammar of the word "universe" precludes us form speaking meaningfully of its age unless we postulate something that existed before its beginning. If the "Universe" denotes all there is, then it is a logical contradiction to speak of its age unless, whatever exists before is not natural and so is not included in the Universe.

If we understand " time " in the ordinary discourse as well as in physics, a zero-point of time–in constrast to a zero-point in time–produces a contradiction. For we can always ask "what happened before ? ". The evidence of the motion of the extra-galactic Nebulae says nothing about the Universe as a whole. If cosmology is restricted to the description and explanation of the large scale features of the Universe, then there is no difficulty. But the Universe as a whole can have no origin. We must be able to conquer the time-sense. That is our chief duty as a human being. In India, Sage Shukadev enabled king Parikshit to conquer the time sense within 7 days. There are still some sages in India who have conquered the time-sense. But the educational ministers of all national governments give such historical education to the students that they are defeated by the time-sense. We may pray to God that integral education may begin in all countries without any further delay.

Linearity either in time or in space is not an absolute and ultimate quality of nature. It is merely a temparary human relation which disappears in sound sleep and must be conquered in the waking state by means of integral education.

ॐ

The books of Swami Madhavtirtha can be had at the following places :–

1. (a) Bombay–N. M. Thakar & Co., Book-Sellers, 140, Princess Street.
   (b) Chetna Limited, Rampart Row, Fort.
   (c) Messrs. Taraporewalla, book sellers, Hornby Road.
2. Madras–Messrs Higginbothams & Co. Book Sellers, Mount Road.
3. Calcutta–Asha Trading Co. C 17 Bagree Market, 71 Canning street.
4. New Delhi, Jain Book Agency. 9–c. Prem House, Canaught place.
5. Poona–Oriental Book House, 330 A, Sadashiv Peth.
6. Benaras–Indian Book Depot, (Theosophical Society) Kamacha.
7. Allahabad-New Kitabistan, 15 A, Sardar Patel Road.
8. Surat–Sastu Aushadhalaya, Balaji Road.
9. Baroda–Pustakalay Sahayak Sahakari Mandal, Raopura.
10. Rajkot-Mohanlal Dossabhai, Book–seller, Para Bazar.
11. Jamnagar–Kashi Vishwanath Mandir.
12. Valad–Vedant Ashram, Station Medra, (Ahmedabad–Prantij Rly.)

reviews of the above books can be had from:–

Vedant Ashram,
Post. Valad.
(Ahmedabad Prantij Rly.)

Time and space have quantities as well as qualities according to whether the observer is an embodied observer or a disembodied observer. Every stage of evolution does possess all the three Gunas of Maya though in different proportion. Time sense begins when attention is given to the proportion and not to the Gunas.

When knowledge is formulated in a frame which compels us to separate a time-dimension from the eternal order to which it belongs, a component called mass or individual energy is separated. There is also change of mass according to velocity or according to the nature of Karma. Then individuality is born, space is born and a time unit is born.

The time sense can be conquered by true love and knowledge. When two lovers look into each other's eyes, they become aware that their thought and Joy are numerically one. Then there are not two individuals and no time–space divisions. Similarly in spiritual consciousness, there are not more than one individual, There are no time-space divisions. The Universe is uni–verse. one song, without a begining and without an end.

These subjects have been briefly explained in this book.

By the same author

1.	Higher culture, a guide for rising countries	1—8—0
2.	Wonders of the Time-space	3—0—0
3.	Maya, its spiritual exposition based on the theory of relativity	1—0—0
4.	Evolution and Relativity	0—8—0
5.	World peace	0--8—0
6.	The Concept of time in Indian philosophy	1—2—0
7.	The concept of space in Indian philosophy	1—8—0
8.	Integral education	1—8—0
9	Is the world real ?	0—4—0
10.	Human Rights	3—0—0
11.	The Grace of God	1—0—0
12.	One World Government	2—8—0

◆

Available from :—

The addresses given on the last page of this book.